

Creating formula

- In a spreadsheet it is often required to do some arithmetic operations on the values
- The values entered may change. Hence we use cell references instead of values.
- Arithmetic calculations are performed on values stored in the cells
- An expression which comprises of constants , cell references , functions and operators is known as formula
- Every formula begins with = sign
- Formula can be typed or entered by pointing method

SUM & IF functions

- SUM is used to find total of values in given range .
- Eg. =sum(A1:A5) will add all the values in the cells A1 to A5.
- IF : It checks the given condition and accordingly proceeds to calculate a value depending on whether the condition is true or false.
- = IF (condition , true , false)
- Condition is evaluated first , if it is satisfied , the statement at true part is executed otherwise the statement at false part is executed
- Eg. = IF(C5>2000, 0.5*C5 , 0.8 *C5)
- If C5 = 1000 , the condition is false so 0.8*C5 will be executed .
- Value is $0.8 * 1000 = 800$
- If C5 = 3000 , the condition is true so 0.5*C5 will be executed .
- Value is $0.5 * 3000 = 1500$

Questions on Use of formula

SIMPLE IF STATEMENT

Question 1

ROLL NO.	NAME	CATEGORY	FEES
1	AJAY	OPEN	5000
2	AMIT	MINORITY	5000
3	GEETA	RESERVED	5000
4	HEENA	OPEN	5000
5	JAY	RESERVED	5000
6	TINA	RESERVED	5000
7	PAYAL	MINORITY	5000
8	KIRAN	MINORITY	5000
9	PANKAJ	OPEN	5000

Calculate the concession of 20% in the fees for Minority students & Net payable fees in the above worksheet

Answer :

To calculate concession :

1. Type concession in cell E1
2. In E2 type the formula =IF(C2="RESERVED",E2*20%,0)
3. It displays concession for the first student
4. Drag the formula to the subsequent cells to get the concession for all students

To calculate Net payable fees:

1. Type Net payable fees in cell F1
2. In F2 type the formula = D2-E2
3. It displays Net payable fees for the first student
4. Drag the formula to the subsequent cells to get the Net payable fees for all students

Question 2

PASSANGER NO.	NAME	BAGGAGE WEIGHT
BA E10	MR. AJAY KUMAR	30
BA E11	MR. AMIT G.	24
BA E12	MRS. GEETA PANDE	31
BA E13	MS. HEMA NABAR	22
BA E14	MS. LAXMI SHUKLA	26
BA E15	MRS. JINAL PAI	27
BA E16	MR. BIPIN JOSHI	28
BA E17	MS. KAVITA JHA	14
BA E18	MR. RAJ MANE	20
BA E19	MR. OMKAR JOG	29
BA E20	MS. GOVIND H.	31

Calculate a penalty of Rs. 500/- per extra kg. for the baggage weighing more than 23 Kgs.

Answer :

To calculate penalty:

1. Type penalty in cell D1
2. In D2 type the formula =IF(C2>23, (C2-23)*500,0) It displays penalty for the first passenger
3. Drag the formula to the subsequent cells to get the concession for all passengers

Question 3

CUST NO	NAME	PURCHASE
101	AJAY	2000
102	AMIT	1000
103	GEETA	580
104	HEENA	700
105	JAY	200
106	TINA	1000
107	PAYAL	1200
108	KIRAN	1700
109	PANKAJ	900
110	HITEN	480

Calculate discount of 5% for purchase over Rs.1000 and net payable amount

Answer :

To calculate discount:

1. Type discount in cell D1
2. In D2 type the formula =IF(C2>1000,C2*5%,0)
3. It displays discount for the first customer
4. Drag the formula to the subsequent cells to get the discount for all customers

To calculate Net payable amount:

1. Type Net payable amount in cell E1
2. In E2 type the formula = C2-D2
3. It displays Net payable amount for the first customer
4. Drag the formula to the subsequent cells to get the Net payable amount for all customers

COMPOSIT IF STATEMENT

Composite IF statement can be formed by combining two conditions using AND / OR operators.

= IF(AND(Condition 1, Condition 2),true ,false)

= IF(OR(Condition 1, Condition 2),true ,false)

Question 1

ENO	DEPT	BASIC PAY	AGE
SA101	SALES	50000	30
AC203	ACCOUNTS	40000	25
MK110	MARKETING	35000	40
PR100	PRODUCTION	30000	35

Calculate allowance as 40% of basic for employees of SALES department and with age above 25. For all others the allowance is calculated as 25%.

Answer :

To calculate allowance:

1. Type allowance in cell E1
2. In E2 type the formula = IF(AND(B2 = "SALES" , D2>25), C2*40% , C2*25%)
3. It displays allowance for the first employee
4. Drag the formula to the subsequent cells to get the allowance for all employees

Question 2

SNO	SALE	COMMISSION
101	100000	20000
102	50000	9000
103	60000	10800
104	80000	16000
105	78000	15600
106	81000	16200
107	59000	10620

Calculate commission at 18% of Sale , if sale is between 50000 and 70000, otherwise it is 20% of Sale.

Answer :

To calculate **commission**:

1. Type **commission** in cell D1
2. In D2 type the formula
= IF(AND(B2 >= 50000 , B2 <= 70000), B2* 0.18 , B2 * 0.2)
3. It displays **commission** for the first salesman
4. Drag the formula to the subsequent cells to get the **commission** for all salesman

Question 3

ENO	DEPT	BASIC PAY	CAR ALLOWANCE
SA101	SALES	50000	
AC203	ACCOUNTS	40000	
MK110	MARKETING	35000	
PR100	PRODUCTION	30000	

Calculate the Car Allowance as 3500 for employees of SALES or MARKETING departments.
For all others it is 2000.

Answer :

To calculate allowance:

1. Type allowance in cell E1
2. In E2 type the formula
= IF(OR(B2 = "SALES" , B2 ="MARKETING"),3500,2000)
3. It displays allowance for the first employee
4. Drag the formula to the subsequent cells to get the allowance for all employees

NESTED IF STATEMENT

Question 1

SNO	SALE	COMMISSION
101	100000	
102	50000	
103	60000	
104	80000	
105	78000	
106	81000	
107	59000	

Calculate commission in C2 as follows

SALE	COMMISSION
0 - 40000	5%
40000 - 80000	7%
80000 & ABOVE	10%

Answer :

To calculate commission:

1. Type **commission** in cell C1
2. In C2 type the formula
= IF(B2< 40000 , B2*5% , IF (B2 < 80000, B2*7%, B2 * 10%))
3. It displays **commission** for the first salesman
4. Drag the formula to the subsequent cells to get the **commission** for all salesman

Question 2

PASSANGER NO.	PASSENGER NAME	VALUE OF GOODS	CUSTOM DUTY
BA E10	MR. AJAY KUMAR	50000	
BA E11	MR. AMIT G.	80000	
BA E12	MRS. GEETA PANDE	45000	
BA E13	MS. HEMA NABAR	120000	
BA E14	MS. LAXMI SHUKLA	70000	
BA E15	MRS. JINAL PAI	150000	
BA E16	MR. BIPIN JOSHI	60000	
BA E17	MS. KAVITA JHA	50000	
BA E18	MR. RAJ MANE	90000	
BA E19	MR. OMKAR JOG	70000	
BA E20	MS. GOVIND H.	140000	

Calculate Custom Duty based on Value of Goods

VALUE OF GOODS	CUSTOM DUTY
FIRST 60,000	NIL
NEXT 40,000	10%
EXCESS	20%

Answer :

To calculate Custom Duty:

1. Type Custom Duty in cell D1
2. In D2 type the formula
= IF (C2 <=60000 , 0 , IF (C2 <= 100000 , (C2 - 60000) * 10% , 4000+(C2-100000)*20%))
3. It displays Custom Duty for the first passenger
4. Drag the formula to the subsequent cells to get the Custom Duty for all passengers

Question 3

CUSTOMER NO.	CUSTOMER NAME	NO. OF CALLS	CALL CHARGES	RENT	BILL AMOUNT
BA E10	MR. AJAY KUMAR	200			
BA E11	MR. AMIT G.	250			
BA E12	MRS. GEETA PANDE	300			
BA E13	MS. HEMA NABAR	350			
BA E14	MS. LAXMI SHUKLA	180			
BA E15	MRS. JINAL PAI	210			
BA E16	MR. BIPIN JOSHI	120			
BA E17	MS. KAVITA JHA	300			
BA E18	MR. RAJ MANE	250			
BA E19	MR. OMKAR JOG	110			
BA E20	MS. GOVIND H.	200			

Calculate Telephone Bill based on number of calls

number of calls	Call Charges
First 200	Nil
Next 100	Re. 1 per call
Excess	Re. 2 per call

All customers are charged Rs. 500 as monthly rent.

Answer :

To calculate Call Charges:

1. Type Call Charges in cell D1
2. In D2 type the formula
 $= \text{IF}(C2 \leq 200, 0, \text{IF}(C2 \leq 300, (C2-200), 100+(C2-300) * 2))$
3. It displays Call Charges for the first customer
4. Drag the formula to the subsequent cells to get Call Charges for all customers

To calculate Bill Amount:

1. Type Rents in cell E1 and 500 in cell E2
2. Drag it to subsequent cells to get rent 500 for all the customers
3. Type Bill Amount in cell F1
4. In F2 type the formula $= D2+E2$
5. It displays Bill Amount for the first customer
6. Drag the formula to the subsequent cells to get Bill Amount for all customers